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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,031	03/30/2001	Muthiah Manoharan	ISIS-4723	1044

7590

02/11/2003

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EXAMINER

EPPS, JANET L

ART UNIT

PAPER NUMBER

1635

DATE MAILED: 02/11/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/823,031

Applicant(s)

MANOHARAN ET AL.

Examiner

Janet L Epps-Ford, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 and 40-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-39 and 50-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.7. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 1-21, and 40-49 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

Applicant's election with traverse of Group II, claims 22-39 and 50-60, additionally, Applicants elected compound 120, depicted on page 70 of the specification as filed, to be searched with the elected invention, in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the subject matter recited in the present claims is such that a reasonable search would necessarily reveal any and all prior disclosures of claimed species, assuming that any exist. Moreover, Applicants note that the claims have been classified in the same class and subclass, and that searching the claimed subject matter would not be a serious burden on the Examiner. This is not found persuasive because it is noted that in order for all the limitations recited in the instant claims to be properly considered a search of commercial databases would be necessary, this requires type of search does not utilize a search by class or subclass of the claimed invention. If a search of the full scope of the claimed invention were limited to a mere class/subclass search, there would be no serious burden upon the examiner. However, the search of group I requires a distinct structure and word search in commercial databases that is not required for the search of group II.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 22-39 and 50-60 are rejected under 35 U.S.C. 103(a) as being anticipated by Guzaev et al. (US 5,959,090)

Guzaev et al. disclose reagents and a method for chemical phosphorylation of oligonucleotides. The Guzaev et al. invention includes phosphoramidite building blocks according to formula (1) (col. 3, lines 1-10), wherein R1 and R2 are -CO<sub>2</sub>-Ethyl groups as recited in step (a) of claims 22 and 50 of the instant application. See also the phosphoramidite building block disclosed at col. 3, lines 30-39 of Guzaev et al., this compound is identical to that set forth in step (h) of claim 22 and step (f) of claim 50 of the instant application. The invention of Guzaev et al. further relates to a process for preparing substantially pure oligonucleotides having a phosphate group at the 5'-terminus (see col. 3, lines 65-67). This process includes reacting a support bound 4,4'-dimethoxytrityl (DMTr) protected oligonucleotide with a phosphoramidite building block according to formula 1 (wherein R1 and R2 are -CO<sub>2</sub>-Ethyl groups as recited in step (a) of claims 22 and 50 of the instant application), to form a protected phosphorylated oligonucleotide linked to a support (see structure recited in col. 4, lines 35-43). After the phosphorylation reaction the oligonucleotide is cleaved from the support material to provide the unbound protected phosphorylated oligonucleotide. The material is recovered and

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the DMTr group is removed to form a phosphorylated oligonucleotide (see col. 4, line 60-65). The side chain on the phosphorylated oligonucleotide is then removed to provide an oligonucleotide having a phosphate group at the 5'-terminus according to the formula recited in col. 5, lines 10-15 of Guzaev et al.

Additionally, Guzaev et al. describes the use of the phosphoramidite building blocks described above in standard oligonucleotide synthesis, this method comprises the use of compounds such as 1H-tetrazole, oxidizing reagents such as Iodine, and deprotecting reagents such as dichloroacetic acid, and subsequently treated by ammonolysis (for more details of the disclosed process and details regarding the specific reagents used see col. 9-10).

Although Guzaev et al. does not specifically recite the repetition of steps c and d as in the instant claims, it would have been obvious to one of ordinary skill in the art at the time of filing of the instant application to modify the process disclosed by Guzaev et al. by repeating one or more steps. One of ordinary skill in the art would have been motivated to make this modification since it is obvious to the ordinary artisan to vary the parameters in a given reaction in order to optimize the results of a process previously disclosed in the prior art.

Therefore, the invention as a whole would have been *prima facie* over Guzaev et al. at the time of filing of the instant application.

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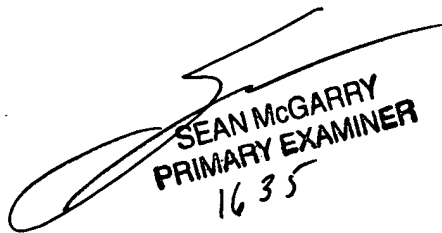
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L Epps-Ford, Ph.D. whose telephone number is 703-308-8883. The examiner can normally be reached on M-T, Thurs-Friday 9:00AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John LeGuyader can be reached on (703)-308-0447. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-746-5143 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Janet L Epps-Ford, Ph.D.  
Examiner  
Art Unit 1635

*JLE*  
February 10, 2003

  
SEAN MCGARRY  
PRIMARY EXAMINER  
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